



# Castilleja

*A Publication of the Wyoming Native Plant Society*

May 2004, Volume 23, No. 2

[www.uwyo.edu/wyndd/wnps/wnps\\_home.htm](http://www.uwyo.edu/wyndd/wnps/wnps_home.htm)

## Vagrant Lichen Charged in Elk Deaths

*Xanthoparmelia chlorochroa* (tumbleweed shield lichen) has been charged in the deaths of 304 elk south of Rawlins during February and March, by the Veterinarian Laboratory of Wyoming Game and Fish Department working with the Wyoming State Veterinarian Laboratory. Two of three healthy elk fed on a diet of the species developed paralysis conditions identical to those of elk in the wild, conditions that could not be reversed by intervention. The allegations of usnic acid toxicity have not been corroborated and many other forms of poisoning including heavy metal toxicity have been ruled out.

*Xanthoparmelia chlorochroa* is a widespread foliose yellow-green lichen of sagebrush landscapes, a member of the largest North American genus of vagrant lichens (Rosentreter 1993). Vagrant lichens are those taxa which grow, persist, and reproduce without attachment to substrate. They disperse by wind ... and wildlife. The technical morphological and chemical traits for northern Rocky Mountains species are presented by McCune and Goward (1995), and a field key to more common *Xanthoparmelia* of western North America was developed by Rosentreter (1993).

By contrast, pronghorn antelope use of vagrant lichens under stress periods appears to be critical to the long-term viability of their populations in eastern Idaho valleys (Thomas and Rosentreter 1992).

Research into stress-induced chemistry of *Xanthoparmelia chlorochroa* and the capacity for digestive tract adaptations in elk are proposed. ...The jury is out.



*Xanthoparmelia chlorochroa* (tumbleweed shield lichen)  
By Wyoming Game and Fish Department

### Literature Cited

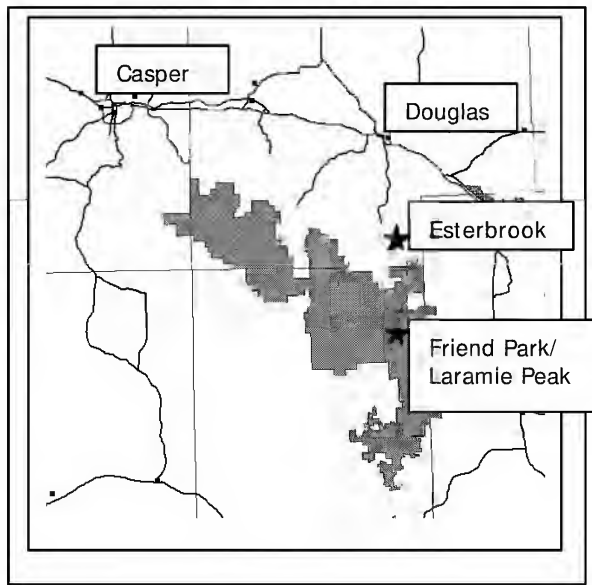
- McCune, B. and T. Goward. 1995. Macrolichens of the Northern Rocky Mts. Mad River Press, Eureka, CA.  
Rosentreter, R. 1993. Vagrant lichens in North America. The Bryologist 96(3): 333-338.  
Thomas, A. and R. Rosentreter. 1992. Antelope utilization of lichens in the Birch Creek Valley of Idaho. 15<sup>th</sup> Biennial Pronghorn Antelope Workshop.

(Background information about the elk deaths is also posted at the Wyoming Game & Fish homepage at [gf.state.wy.us](http://gf.state.wy.us) and by internet news at [www.earthfiles.com/news/news.cfm](http://www.earthfiles.com/news/news.cfm))

### In this issue:

- Announcing Laramie Mtns Fieldtrip . . . . . 2  
Come to Cody and Go WILD . . . . . 2  
Wildflowers of Wyoming - Review . . . . . 3  
Vascular Plant Identification References . . . . . 4  
Plants of the Lewis & Clark Expedition – Review .7

**WNPS NEWS –**  
**Announcing: Laramie Mtns Fieldtrip**



WNPS 2004 fieldtrip, **June 19-20**, will be lead by Bob Dorn and others in the Laramie Mountains. Take WY Hwy 94 south of Douglas app. 30 miles to Esterbrook and meet at the USFS Esterbrook Campground. (To reach the campground, drive south through Esterbrook. The road bends east. Continue on the winding road app. 3 miles). The general membership meeting begins @ **9:30 am**. The fieldtrip begins @ 10:00 am. Allow plenty of travel time. The group will spend the morning exploring the Esterbrook area, and visit Laramie columbine (*Aquilegia laramiensis*) in the afternoon, ending up at Friend Park to rendezvous with an Audubon group (bring potluck items if you care to join). Sunday offers opportunities to travel the Fetterman Road south to see Laramie false sagebrush (*Sphaeromeria simplex*) or to scale Laramie Peak. To reserve a Friend Park campsite, contact: Barb Gorges (bgorges@juno.com or 307-634-0463). Maps are recommended for any exploring or "shortcuts" back home: USFS Medicine Bow National Forest – Laramie Peak Unit, and BLM Surface Management maps (1:100,000): Douglas, Laramie Peak, Rock River.

Treasurer's Report: Balance as of 10 April 2004: General Fund \$904.83; Student Scholarship Fund \$131.50; Total funds \$1021.33

New Members: Please welcome the following new members of WNPS: Ben Read, Wilson; Mary Springer, Jackson; Cathy Shill, Jackson.

Newsletter announcements and articles  
are *really, really, really* welcome.

**Come to Cody and Go *WILD***

CELEBRATING WILDFLOWERS will be at the Draper Museum of Natural History in Cody, WY, cosponsored by WNPS, on June 5-6.

Saturday morning workshops include:

- ? Wild, edible and medicinal plants
- ? Greater Yellowstone wildflowers
- ? Planting drought-adapted native plants

Saturday pm hikes: Museum Nature Trail

Saturday evening lecture @ 7 pm: Plants of the Lewis & Clark Expedition, by Wayne Phillips (p. 7)

Sunday field trip: Heart Mountain

There are registration costs for each event except the Museum Nature Trail hikes on Saturday afternoon. To request the schedule and registration information, email kristina@bbhc.org or call 307-587-4771.

Wyoming Native Plant Society  
P.O. Box 2500, Laramie, WY 82073

WNPS Board

President: Jean Daly (Big Horn) – 674-9728  
Vice President: Melanie Arnett (Laramie) – 742-0988  
Sec.-Treasurer: Drew Arnold (Laramie) – 742-7079  
Board Members: Kent Houston (Cody) – 527-6572  
Katherine Zacharkevics (Spearfish, SD) - 605-642-2240

Newsletter Editor: Bonnie Heidel (Laramie;  
email: bheidel@uwyo.edu)

Teton Chapter: PO Box 82, Wilson, WY 83014  
(Joan Lucas, Treasurer)

Bighorn Native Plant Society: PO Box 21, Big Horn, WY  
82833 (Jean Daly, Treasurer)

Webmaster-Tessa Dutcher (tessad@uwyo.edu)

Invitation from Montana Native Plant Society: Above the Trees - Annual MTNPS meeting, held July 9-11 on the Beartooth Plateau, based at the Timbercrest Girl Scout Camp south of Red Lodge, MT, with a menu of easy-to-strenuous hikes. Registration and schedule info is posted at [www.umt.edu/mnps/MNPSreg04.pdf](http://www.umt.edu/mnps/MNPSreg04.pdf)  
Adult registration is \$15 is submitted before 1 June.

Invitation from Great Plains Native Plant Society: McIntosh Fen in the Black Hills in South Dakota, July 24. Contact Beth Burkhart, leader, for meeting information (work: 605-673-9343; baburkhart@fs.fed.us). No cost.

Monitoring Whitebark Pine for Blister Rust: A Methods Workshop Now rescheduled for JUNE 28-30, 2004  
NOTE: attendance is limited to 80. For information and registration contact: Debbie Graham, Continuing education, University of Montana (406-243-4623), email: [debra.graham@mso.umt.edu](mailto:debra.graham@mso.umt.edu)

## **New Guidebook to Wyoming Wildflowers Hot Off the Press**

Review by Hollis Marriott

Do you ever wish you were a birder instead of a botanist? I do ... whenever I hear "Oh, a botanist! Can you tell me the best book for identifying wildflowers?"

According to the National Geographic Society's *Birds of North America* (2nd ed.) there are 800 species of birds on our continent north of Mexico. In contrast, there are at least 2500 species of vascular plants known from Wyoming alone. Even excluding grasses and grass allies, ferns and fern allies, aquatics, and other plants with inconspicuous flowers (for example, willows), we still are left with at least 1900 species that could be included in a guide to wildflowers of the state (thanks to Walt Fertig for providing data for my rough analysis). That's the first problem with being a botanist.

Then there is the problem of plant characteristics. The features that distinguish one plant species from another tend to be small, are sometimes subtle, and often have puzzling terms ... consider "inferior ovary" for example.

In spite of the challenges, there are many wildflower books on the market today, with a variety of approaches to help readers identify plants. A common one groups species by flower color. The reader thumbs through the appropriate section trying to find an illustration or photo that matches the plant in question. Other books simply group species taxonomically, usually by family. For those skilled in plant family recognition, this approach is satisfactory, but most users will end up searching much of the book for a best match.

Several regional field guides have taken the bold step of including a family key. For those not (yet!) familiar with keys to plant identification, it is a series of choices, usually two per step, leading to a final determination. Keys are a fundamental part of technical identification manuals, but also can be used effectively in field guides with sufficient explanation provided. To make full use of this approach, the reader first keys out his specimen to family by examining various features of the plant in question, usually floral or fruit characteristics. He can then thumb

through the appropriate *small* section of the book for a final determination.

Fortunately for us, a new field guide has just been released: *Wildflowers of Wyoming* by Diantha States and Jack States. 2004. Mountain Press Publishing Co., Missoula, MT. It is a collection of descriptions and terrific photos of over 325 native species. It would be very tempting just to thumb through the beautiful photography to identify a plant of interest, but ... RESIST! The States have included a key to families in the introductory section, along with drawings and definitions of features used in the key. Here's an opportunity to upgrade your plant identification skills, which will pay off in the long run. [NOTE: When it comes to recognizing and describing plant characteristics, more is better. Invest in the excellent illustrated guides to plant identification terminology listed in this issue, e.g., Harrington and Swallow (1957), Harris & Harris (2001).]

The States have included two additional tools to help the reader find her plant more quickly. Two pages are devoted to the distinctive characteristics of 16 of the more common plant families in Wyoming. Being able to recognize members of these families at a glance is a very good way to make identification a LOT easier. Also in the introductory section are six pages of "photo thumbnails" -- 2 x 2 cm flower photos arranged by flower color and flower type (for example, united petals). The authors have gone to a lot of work to help the reader avoid needless thumbing, so take advantage of these tools.

The obvious limitation of this book, and all field guides, is the fact that it includes only a portion of the species found in the state. The States have carefully selected what they consider to be the species most commonly seen. Even so, it is quite possible that you will find a plant that will not key out, nor match any of the photos. Just keep this in mind; do not think yourself an idiot or throw the book off a cliff if you find a plant that refuses to cooperate.

*Wildflowers of Wyoming* is more than a guide for identification. There is information of interest for each species, ranging from edibility to medicinal use to weediness to folklore. When I read that harebells (genus *Campanula*) are considered to be the flowers of witches "who used their juices to transform themselves into hares," I was hooked. This new guide may not have every species in the state, but it is a wonderful resource for wanderings through Wyoming woods and prairies.

# WYOMING TECHNICAL VASCULAR PLANT IDENTIFICATION REFERENCES

May 2004

The growing season is upon us - are you ready? References for identifying Wyoming vascular plants are listed below, drawing from printed material across the state and the region. The list below includes all references cited on the Rocky Mountain Herbarium homepage with minor additions and updates, plus a separate non-technical section. It is also posted electronically by the Wyoming Native Plant Society for distribution and updating, while inclusion does not signify endorsement. Information on the sources for ordering these publications is presented at the end. The list includes internet postings as well as books no longer in print that are available through public libraries and used book sellers. The audience includes anyone from taxonomists and other researchers who might not be familiar with the Wyoming literature, to ranchers, educators, extension agents, and native plant gardeners with wild interests.

Comments are welcome. Would you like to see this reference list annotated? Would you like to see a list of nonvascular plant references? Would you like information on landscaping with natives? ...Would you consider maintaining or developing reference lists for Wyoming Native Plant Society?

<u>Reference</u>	<u>Plants</u>	<u>Media</u>	<u>Graphic</u>	<u>Source</u>
<b>Albee</b> , B. J., L. M. Shultz, and S. Goodrich. 1988. Atlas of the Vascular Plants of Utah. Utah Museum of Natural History, Occasional Publ. 7. Posted electronically at: <a href="http://www.gis.usu.edu/Geography-Department/utgeog/utvatlas/ut-vascatlas.html">www.gis.usu.edu/Geography-Department/utgeog/utvatlas/ut-vascatlas.html</a>	Flora map	Book, internet	None	Not in print
<b>Arnold</b> , L., B. Albee, and A. Wyckoff. 1980, 2nd ed. Flora of the Central Wasatch Front, Utah. Univ. of Utah Printing Service, Salt Lake City. Available on CD by W. Gray, thru Utah Native Plant Society.	Flora	Book, h CD	Illustr.	Not in print
<b>Barkley</b> , T. M., ed. 1977. Atlas of the Flora of the Great Plains. Iowa State Univ. Press, Ames. ISBN 0-8138-0135-4	Flora map	Book, h	None	Not in print
<b>Beetle</b> , A.A. and K.L. Johnson. 1982 (repr.1996). Sagebrush in Wyoming. Bull. 779, Agricultural Experiment Station, University of Wyoming. Laramie.	Sagebrush	Book, p	Photo	WY Ext. Serv.
<b>Cronquist</b> , A., A. H. Holmgren, N. H. Holmgren, and J. L. Reveal. 1972. Intermountain Flora. Vol. 1, Hafner Publ. Co.	Flora	Book, h	Illustr.	CONPS
<b>Cronquist</b> , A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren. 1977. Intermountain Flora. Vol. 6, Columbia University Press, New York.	Flora	Book, h	Illustr.	CONPS
<b>Cronquist</b> , A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren. 1984-1994. Intermountain Flora. Vols. 3B, 4, 5, New York Botanical Garden, Bronx.	Flora	Book, h	Illustr.	CONPS
<b>Cronquist</b> , A., N. H. Holmgren, and P. K. Holmgren. 1997. Intermountain Flora. Vol. 3A, New York Botanical Garden, Bronx.	Flora	Book, h	Illustr.	CONPS
<b>Dorn</b> , R. D. 1977. Manual of the Vascular Plants of Wyoming. Garland Publ. Co., New York, NY.	Flora	Book, h	None	Not in print
<b>Dorn</b> , R. D. 1977. Flora of the Black Hills. Mountain West Publ., Cheyenne, WY.	Flora	Book, p	None	Not in print
<b>Dorn</b> , R. D. 1984. Vascular Plants of Montana. Mountain West Publ., Cheyenne, WY.	Flora	Book, p	None	RM
<b>Dorn</b> , R. D. 1992. Vascular Plants of Wyoming. 2nd ed., Mountain West Publ., Cheyenne, WY.	Flora	Book, p	None	Not in print
<b>Dorn</b> , R.D. 1997. Rocky Mountain Region Willow Identification Field Guide. USDA Forest Service, R2-RR: 97-01. Lakewood, CO.	Willow	Booklet	Illustr., Photo	USFS
<b>Dorn</b> , R.D. 2001. Vascular Plants of Wyoming, 3rd ed. Mountain West Publ., Cheyenne, WY.	Flora	Book, p	None	RM, CONPS
<b>Fertig</b> , W., C. Refsdal, and J. Whipple. 1994. Wyoming Rare Plant Field Guide. Wyoming Rare Plant Technical Committee, Cheyenne.	Rare species	Book, p	Illustr. Photo	BLM - WY
<b>Fertig</b> , W. and S. Markow. 2001. Guide to the willows of Shoshone National Forest. USDA FS Gen. Tech. Rep. RMRS-GRTR-83. Rocky Mountain Research Station, Ft. Collins, CO.	Willow	Booklet	Illustr	USFS
<b>Flora of North America Editorial Committee</b> , eds. 1993+. Flora of North America North of Mexico. 8+ volumes. New York, NY.	Flora	Book, h	Illustr.	CONPS
<b>Goodrich</b> , S. and E. Neese. 1986. Uinta Basin Flora. USDA, Forest Service, Intermountain Region, Ogden, UT.	Flora	Book, p	None	CONPS
<b>Great Plains Flora Association</b> . 1986. Flora of the Great Plains. Univ. Kansas Press, Lawrence, KS. ISBN 0-7006-0295-X	Flora	Book, h	None	CONPS
<b>Hallsten</b> , G.P., Q.D. Skinner and A.A. Beetle. 1999, 4th ed. Grasses of Wyoming. RJ-202. Agricultural Experiment Station, University of Wyoming. Laramie, Wyoming.	Grass	Book, h	Illustr.	WY Ext. Serv.



<u>Reference</u>	<u>Plants</u>	<u>Media</u>	<u>Graphic</u>	<u>Source</u>
<b>Harrington</b> , H. D. 1954. Manual of the Plants of Colorado. Sage Books.	Flora	Book, h		Out
<b>Hartman</b> , R.L. and B.E. Nelson. Atlas of the Flora of Wyoming. Rocky Mountain Herbarium, University of Wyoming, Laramie. Posted at: <a href="http://www.rmh.uwyo.edu/">www.rmh.uwyo.edu/</a>	Flora map	Internet	None	NA
<b>Hartman</b> , R.L. and B.E. Nelson. A Checklist of the Flora of Wyoming. Rocky Mountain Herbarium, University of Wyoming, Laramie. Posted at: <a href="http://www.rmh.uwyo.edu/">www.rmh.uwyo.edu/</a>	Flora checklist	Internet	None	NA
<b>Hartman</b> , R.L. and B.E. Nelson. A Checklist of the Flora of Colorado. Rocky Mountain Herbarium, University of Wyoming, Laramie. Posted at: <a href="http://www.rmh.uwyo.edu/">www.rmh.uwyo.edu/</a>	Flora checklist Flora	Internet Book, h	None Illustr.	NA Publ.
<b>Hitchcock</b> , C. L. and A. Cronquist. 1973. Flora of the Pacific Northwest. Univ. of Washington Press, Seattle. ISBN 0-295-95273-3				
<b>Hitchcock</b> , C. L., A. Cronquist, M. Ownbey, and J. W. Thompson. 1955-1969. Vascular Plants of the Pacific Northwest. 5 vols., Univ. Washington Press, Seattle.	Flora	Book, h	Illustr.	Publ.
<b>Hurd</b> , E.G., N.L. Shaw, J. Mastroguseppe, L.C. Smithman, and S. Goodrich. 1998. Field Guide to Intermountain Sedges. Rocky Mountain Res. Stn. Gen. Tech. Report RMRS-GTR-10. Posted electronically at: <a href="http://www.fs.fed.us/rm/pubs/rmrs_gtr010.html">www.fs.fed.us/rm/pubs/rmrs_gtr010.html</a>	Sedge	Book, p Internet	Illustr., Photo	USFS - Ogden
<b>Hurd</b> , E.G., S. Goodrich, and N.L. Shaw. 1994. Field Guide to Intermountain Rushes. Gen. Tech. Rep. INT-306. USDA Forest Serv. Intermountain Region, Ogden, UT.	Rush	Booklet	Illustr.	USFS - Ogden
<b>Johnston</b> , B.C. 2001. Field Guide to Sedge Species of the Rocky Mountain Region. Pub. R2-RR-01-03. USDA Forest Service, Rocky Mountain Region, Denver, CO.	Sedge	Book, p	Illustr.	USFS - Ft Collins
<b>Lackschewitz</b> , K. 1991. Vascular Plants of West-Central Montana--Identification Guidebook. USDA, Forest Serv., Intermountain Res. Sta. Gen. Tech. Rept. INT-277.	Flora	Book, p	Illustr.	Not in print
<b>Nelson</b> , B. E. 1984. Vascular Plants of the Medicine Bow Range. 2nd ed, Jelms Mountain Press, Jelm, WY.	Flora	Book, p	None	Not in print
<b>Porter</b> , C. L. 1979. Wyoming Trees. Agricultural Ext. Service, B-690. University of Wyoming, Laramie.	Trees	Booklet	Illustr.	Not in print
<b>Scott</b> , R.W. 1995. The Alpine Flora of the Rocky Mountains. Vol. 1. The Middle Rockies. The University of Utah Press, Salt Lake City. ISBN 0-87480-482-5	Flora	Book, h	Illustr.	Publ.
<b>Weber</b> , W. A. and R. C. Wittmann. 2001, 2 <sup>nd</sup> ed. Colorado Flora: Western Slope. Univ. Press of Colorado, Niwot. ISBN 0-87081-553-9	Flora	Book, p	Sel. Illustr.	CONPS
<b>Weber</b> , W. A. and R. C. Wittmann. 2001, 2 <sup>nd</sup> ed. Colorado Flora: Eastern Slope. Univ. Press of Colorado, Niwot. ISBN 0-87081-552-0	Flora	Book, p	Sel. Illustr.	CONPS
<b>Weber</b> , W. A. and R. C. Wittmann. 1992. Catalog of the Colorado Flora: A Biodiversity Baseline. Univ. Press of Colorado, Niwot.	Flora	Book, p	None	CONPS
<b>Welsh</b> , S. L., N. D. Atwood, L. C. Higgins, and S. Goodrich, eds. 2003. Utah Flora. 3rd ed., Brigham Young Univ., Provo, UT. ISBN 0-84252-556-4	Flora	Book, h	None	Publ.
<b>Wyoming Natural Diversity Database</b> - state plant species abstracts. 1998+. Information on field identification and current status, multiple authors, posted at <a href="http://www.uwyo.edu/wyndd">www.uwyo.edu/wyndd</a>	Rare species	Internet	Illustr. Photo	NA

## WYOMING NON-TECHNICAL VASCULAR PLANT IDENTIFICATION REFERENCES

<u>Reference</u>	<u>Plants</u>	<u>Media</u>	<u>Graphic</u>	<u>Source</u>
<b>Duff</b> , J.F. and R.K. Moseley. 1989. Alpine wildflowers of the Rocky Mountains. Mountain Press Publishing Company, Missoula, MT. ISBN 0-87842-238-2	Alpine	Book, p	Photo	Publ.
<b>Harrington</b> , H.D. and L.W. Swallow. 1957. How to Identify Plants. Swallow Press, Chicago, IL.	General	Book, h	Illustr.	CONPS
<b>Harris</b> , J.G. and M.W. Harris. 2001, 2nd ed. Plant identification terminology. An illustrated glossary. Spring Lake Publishing, Spring Lake, UT.	General	Book, h	Illustr.	XX
<b>Harrington</b> , H.D. 1967. Edible Native Plants of the Rocky Mountains. University of New Mexico Press, Albuquerque.	Edible	Book, p	Illustr.	CONPS
<b>Harrington</b> , H.D. 1977. How to Identify Grasses and Grass-like Plants. Swallow Press, Chicago, IL.	Grasses	Book, p	Illustr.	CONPS
<b>Jensen</b> , E. 1987. Flowers of Wyoming Big Horn Mountains and Big Horn Basin. Basin, WY.	General	Book, p	Photo	Not in print
<b>Kershaw</b> , L.J., A. MacKinnon, and J. Pojar. 1998. Plants of the Rocky Mountains. Lone Pine Publishing, Edmonton, AB.	General	Book, p	Photo	CONPS
<b>Kindscher</b> , K. 1992. Medicinal Wild Plants of the Prairie. Univ. Press of Kansas, Lawrence.	Medicin.	Book, p	Illustr.	CONPS

## Reference

	Plants	Media	Graphic	Source
<b>Larson</b> , G.E. and J.R. Johnson. 1999. Plants of the Black Hills and Bear Lodge Mountains. South Dakota State University College of Agriculture and Biological Sciences & South Dakota Agricultural Experiment Station, Brookings, SD. ISBN 0-913062-05-7	Flora	Book, p	Photo	SD Ext. Ser.
<b>Nelson</b> , R. A. and R.L. Williams. 1992, 4th ed. Handbook of Rocky Mountain Plants. Roberts Rinehart Publishers, Niwot, CO. ISBN 0-911797-96-3	General	Book, p	Illustr.	Publ.
<b>Phillips</b> , H. W. 1999. Central Rocky Mountain Wildflowers. Falcon Publ. Co., Helena, MT.	General	Book, p	Photo	Publ.
<b>Rice</b> , P.M. INVADERS Database System. Div. Biol. Sci., Univ. Montana, Missoula. Posted at: <a href="http://www.invader.dbs.umt.edu">www.invader.dbs.umt.edu</a>	Weed map	Internet	Distrib.	NA
<b>Schreier</b> , C. 1996. A Field Guide to Wildflowers of the Rocky Mountains. Homestead Publ., Moose, WY.	General	Book, p	Photo	Publ.
<b>Shaw</b> , R.J. 1981, 2nd ed. Plants of Yellowstone and Grand Teton National Parks. Wheelright Press, Salt Lake City, UT. ISBN 0-937512-02-8	General	Book, p	Photo	Not in print
<b>States</b> , D. and J. States. 2004. Wildflowers of Wyoming. Mountain Press Publishing Company, Missoula, MT.	General	Book, p	Photo	Publ.
<b>Stubbendieck</b> , J.S., S.L. Hatch and C.H. Butterfield. 1997. North American Range Plants. Univ. Nebraska Press, Lincoln.	General	Book, p	Illustr.	Publ.
<b>Taylor</b> , R.J. 1990. Northwest Weeds. Mountain West Publishing Company, Missoula, MT. ISBN 0-87842-249-8	Weeds	Book, p	Photo	WY Weed C.
<b>Taylor</b> , R.J. 1992. Sagebrush Country, a Wildflower Sanctuary. Mountain Press Publishing Co., Missoula, MT.	General	Book, p	Photo	CONPS
<b>USDI Bur. Land Management</b> – Wyoming <a href="http://www.wy.blm.gov/botany/wyspecies.htm">www.wy.blm.gov/botany/wyspecies.htm</a>	General	Internet	Photo	NA
<b>Van Bruggen</b> , T. 1983. Wildflowers, Grasses and Other Plants of the Northern Plains and Black Hills. Badlands Natural History Assoc., Interior, SD. ISBN 0-912410-05-1	General	Book, p	Photo	Publ.
<b>Wingate</b> , J.L. 1990. Rocky Mountain Flower Finder. Nature Study Guide, Rochester, NY.	General	Booklet	Illustr.	CONPS
<b>Wingate</b> , J.L. and L. Yeats. 1995. Alpine Flower Finder. Nature Study Guide, Rochester NY.	General	Booklet	Illustr.	CONPS
<b>Wyoming Weed Handbook</b> , Ser. 1-55 Series. Wyoming Weed and Pest Council. Images also available individually as postcards	Weeds	Booklet	Photo	WY Weed C.

## Sources

Out – Out of print but available through public libraries and used book sellers

BLM – Bureau of Land Management, c/o Jeff Carroll, BLM, P.O. Box 1828, Cheyenne, WY

CONPS – Colorado Native Plant Society, publications list; available at member rates to WNPS members - for non-CONPS members who need current price list and ordering information contact [bheidel@uwyo.edu](mailto:bheidel@uwyo.edu)

Publ – The publisher of the book

RM – Rocky Mountain Herbarium, Botany Dept., Univ. Wyoming, 1000 E. University Ave., Laramie, WY 82071-3165.

SD Ext Serv – South Dakota Extension Service, SD Agricultural Experiment Station, Brookings, SD 57007

USFS - USDA Forest Service, Rocky Mountain Research Station, 240 W Prospect Rd., Fort Collins, CO 80526; also via internet at [http://www.fs.fed.us/rm/main/pubs/pub\\_lists.html](http://www.fs.fed.us/rm/main/pubs/pub_lists.html) or email ([rschneider@fs.fed.us](mailto:rschneider@fs.fed.us))

WY Ext Serv – Wyoming Cooperative Extension Service, P.O. Box 3354, Laramie, WY 82071-3354

WY Weed C – Wyoming Weed & Pest Council, P.O. Box 728, Douglas, WY 82633

### Utah Rare Plants On-line

The Utah Native Plant Society is pleased to announce the Utah internet rare plant guide, an update to the 1991 Utah Endangered Threatened and Sensitive Plant Field Guide. It is posted at: [www.utahrareplants.org](http://www.utahrareplants.org).

### Flora of North America – Standing Order

Oxford University Press announces a 25% discount off all future volumes in the *Flora of North America* series. To place a standing order for future volumes (order ISBN 0-19-521735-7) call 1-800-241-7556 or fax 1-919-677-1303. Publication information is posted at [www.oup.com/us/23861](http://www.oup.com/us/23861).

Plants of the Lewis & Clark Expedition,  
by H. Wayne Phillips, Mountain Press, 2003.

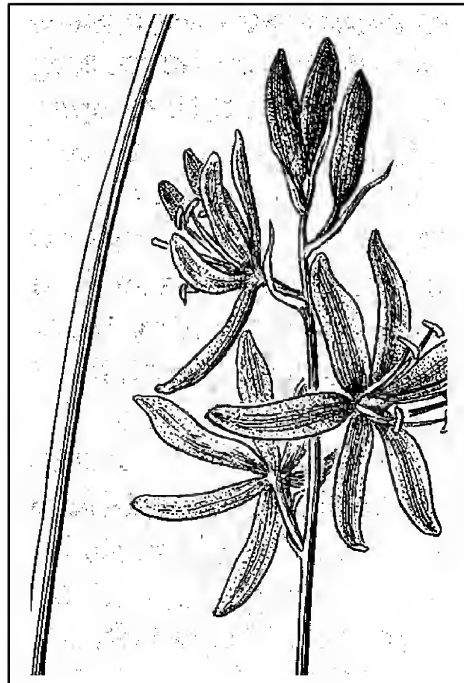
Review by Joe Elliott

(Editor's note: Wayne Phillips will be guest speaker at the "Celebrating Wildflower" event at the Draper Museum on June 5, 2004. The following review is reprinted with permission from the Montana Native Plant Society newsletter.)

The western landscape described in the journals of Meriwether Lewis and William Clark was a source of amazement and wonder to the Corps of Discover and continues to be for many of us with an affinity for native plants and natural places. We cannot go back in time to the days of the buffalo and seemingly endless expanses of unturned prairie and uncut forest, but *Plants of the Lewis and Clark Expedition* presents a botanical piece of the natural world that depicts the West before noxious weeds, interstate highways, and computers. Wayne Phillips's book fosters a pioneer spirit that allows us to vicariously slog, paddle, and marvel at plants with Lewis and Clark as they somehow make it across the continent and back. All the native plants that Lewis and Clark described in their journals, some new to science, are still extant and many are familiar friends.

Wayne's enthusiasm, attention to botanical and historical accuracy and photographic skill have resulted in a unique book that has something for the plant enthusiast, history buff, and others who wish to honor the journey of Lewis and Clark on the 200<sup>th</sup> anniversary. *Plants of the Lewis and Clark Expedition* includes descriptions and photographs of 225 plant species collected or described by Lewis and Clark in their journals and excerpts from the original journal entries that describe plant species in the context of the adventures and locations when and where the plant was collected or observed. The journal entries describe interactions with Indians and the traditional use of plants for food, medicine, or other purposes.

An effective presentation in the book is the separation of the explorers' route into geographic regions. Geographic regions are described based on topography, climate, and general vegetation characteristics, and begin with the Eastern Deciduous Forest and progress westward through the Tallgrass Prairie, High



*Camassia quamash* (camas) is the plant species most frequently mentioned in the Lewis & Clark journals, one provided by the Nez Perce rescuing the Corps of Discovery from starvation after crossing the Continental Divide. Illustration by Jeanne R. Janish, from Hitchcock et al. 1994. Vascular Plants of the Pacific Northwest.

Plains, Rocky Mountains, Columbia Plains and Pacific Forest. Each geographical region includes the plants that were described by Lewis and Clark as the expedition passed through regions with distinctly different floras. Wayne describes each plant by growth form (i.e., tree, shrub, grass, forb, or moss), flower and fruit features, flowering season, habitat, and range. He also includes a short interpretive narrative that identifies places the Lewis and Clark journals described by Indian names or descriptions. ...

I first met Wayne Phillips when he gave a public presentation on the plants of the Lewis and Clark Expedition, approximately ten years ago. Wayne was dressed in buckskin and had all the paraphernalia of the well-appointed mountain man or explorer of the period. As a storyteller and botanist, his enthusiasm was contagious. *Plants of the Lewis and Clark Expedition* preserves his inspired account and allows us to perpetually tap into his enthusiasm with the turn of a page. The only thing that would improve the book would be for Wayne to present it personally in buckskin, moccasins, and with the demeanor that could have been Lewis, Clark, or another sturdy member of the Corps of Discovery.

## This Fir's Fer You

(Editor's note: The following is re-printed verbatim from the Lewis & Clark journals, for all WNPS members with travels in the months ahead, roughly estimated at 100% of membership.)

Meriwether Lewis wrote on June 25, 1806, in what is now Idaho:

"last evening the Indians entertained us with seting the fir trees on fire. they have a great number of dry lims near their bodies which when set on fire creates a very suddon and immence blaze from bottom to top of those tall trees. they are a beatifull object in this situation at night. this exhibition reminded me of a display of fireworks. the natives told us that their object in seting those trees on fire was to bring fair weather for our journey..."

(Cited in: Phillips, H.W. 2003. *Plants of the Lewis & Clark Expedition*. See p. 7)

**The Wyoming Native Plant Society**, established in 1981, is a non-profit organization dedicated to encouraging the appreciation and conservation of the native flora and plant communities of Wyoming. The Society promotes education and research on native plants of the state through its newsletter, field trips, and annual student scholarship award. Membership is open to individuals, families, or organizations with an interest in Wyoming's flora. Members receive *Castilleja*, the Society's quarterly newsletter, and may take part in all of the Society's programs and projects, including the annual meeting/field trip held each summer. Dues are \$7.50 annually. To join or renew, return this form to:

Wyoming Native Plant Society  
P.O. Box 2500  
Laramie, WY 82073

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ \$7.50 Regular Membership  
\_\_\_\_\_ \$15.00 Scholarship Supporting Member  
(*\$7.50 goes to the annual scholarship fund*)



Wyoming Native Plant  
Society  
P.O. Box 2500  
Laramie, WY 82073